PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Sylvette Maisonnier *et al.*

Application No.: 09/939,151

Filed: August 24, 2001

For: METHOD FOR PREPARING A LATEX WITH PHOTOCHROMIC PROPERTIES AND USES THEREOF, PARTICULARLY IN OPHTHALMOLOGY

Group Art Unit: 1712

Examiner: P. Tucker

Atty. Dkt. No.: ESSR:052US

CERTIFICATE OF MAILING
37 C.F.R. § 1.8

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September 29, 2003
Date

Mark B. Wilson

I. AMENDMENT; II. RESPONSE TO THE OFFICE ACTION DATED APRIL 9, 2003 AND III. PETITION FOR A THREE-MONTH EXTENSION OF TIME

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants respectfully submit this Response to the Office Action dated April 9, 2003 (the Action) for the above-referenced case. Consideration of this case in view of the Response made below is requested.

Amendments to the Claims begins on page 2 of this paper.

A Response to the Office Action begins on page 8 of this paper.

A Petition for a Three-Month Extension of Time begins on page 17 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

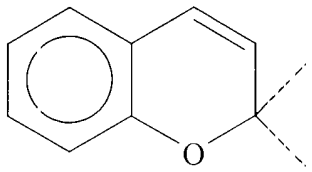
Listing of the Claims:

Claim 24. (currently amended): [Method] A method for preparing a latex with photochromic properties comprising:

preparing an aqueous emulsion (I) of a composition A comprising:

at least one organic monomer Z, wherein said at least one monomer is further defined as comprising a C=C group and being capable of free-radical polymerization, and

one or more organic photochromic compounds containing a nucleus of formula:



; and

polymerizing composition A in the presence of a water-soluble initiator to obtain [paricles] particles of an at least partially polymerized latex with photochromic properties.

Claim 25. (previously presented): The method of claim 24, wherein composition A comprises only one type of organic monomer Z.

Claim 26. (previously presented): The method of claim 24, wherein composition a comprises more than one type of organic polymer Z.

Claim 27. (previously presented): The method of claim 24, wherein the latex is a fully polymerized latex.

Claim 28. (previously presented): The method of claim 24, wherein the latex is a partially polymerized latex.

Claim 29. (previously presented): The method of claim 28, further defined as comprising:

adding to the at least partially polymerized latex a second aqueous emulsion (II) containing a composition B comprising at least one organic monomer capable of free-radical polymerization; and

polymerizing composition to obtain a latex comprising at least biphasic photochromic particles.

Claim 30. (previously presented): The method of claim 29, wherein the biphasic latex is further defined as comprising a core/skin structure.

Claim 31. (previously presented): The method of claim 24, wherein the water-soluble initiator is introduced progressively to the aqueous emulsion I, during the polymerization.

Claim 32. (previously presented): The method of claim 24, wherein the water-soluble initiator and the aqueous emulsion (I) are each introduced progressively into a reaction medium throughout polymerization.

Claim 33. (previously presented): The method of claim 24, wherein the water-soluble initiator is an alkali or ammonium persulfate.

Claim 34. (previously presented): The method of claim 33, wherein the water-soluble initiator is potassium or sodium persulfate.

Claim 35. (previously presented): The method of claim 24, wherein the percentage by weight of the initiator with respect to total organic weight of monomer or monomers capable of free-radical polymerization used for the preparation of the latex is between 0.1 and 1%.

Claim 36. (previously presented): The method of claim 24, wherein the organic monomer Z is an alkyl (meth)acrylate monomer.

Claim 37. (previously presented): The method of claim 24, wherein composition A is further defined as comprising at least one monomer Z which is further defined as a low Tg monomer which leads to a homopolymer whose glass transition temperature is less than or equal to 0°C.

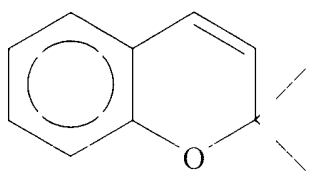
Claim 38. (previously presented): The method of claim 37, wherein the low Tg monomer represents at least 40% by weight of the monomers capable of free-radical polymerization.

Claim 39. (previously presented): The method of claim 24, wherein the particles of the latex are further defined as having a diameter of 50 to 400 nm.

Claim 40. (previously presented): The method of claim 24, wherein a dry extract of the latex represents from 30 to 50% of the total weight of the latex.

Claim 41. (previously presented): The method of claim 24, wherein the pH of the latex is between 5 and 7.

Claim 42. (previously presented): A latex with photochromic properties, further defined as comprising particles of a polymer material resulting from the free-radical polymerization of at least one monomer Z with a C=C group comprising one or more organic photochromic compound comprising a nucleus of formula:



the particles of said polymer material having an average size of between 50 and 400 nm.

Claim 43. (previously presented): The latex of claim 42, wherein the particles are further defined as having an average size of between 80 and 300 nm.

Claim 44. (previously presented): The latex of claim 43, wherein the particles are further defined as having an average size between 150 and 250 nm.

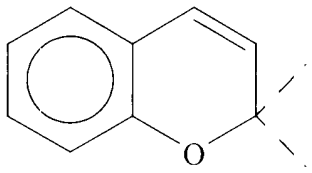
Claim 45. (previously presented): The latex of claim 42, wherein the organic photochromic compound is further defined as not containing an indoline ring.

Claim 46. (previously presented): The latex of claim 45, wherein the particles of polymer material have a biphasic structure, preferably of the core/skin type.

Claim 47. (previously presented): The latex of claim 46, wherein the organic photochromic compound is contained in the core of the particles.

Claim 48. (previously presented): The latex of claim 42, wherein a dry extract of the latex represents from 30 to 50% of the total weight of the latex.

Claim 49. (previously presented): A substrate comprising a dry latex film with photochromic properties, the latex further defined as comprising particles of a polymer material resulting from the free-radical polymerization of at least one monomer Z with a C=C group comprising one or more organic photochromic compound comprising a nucleus of formula:



the particles of said polymer material having an average size of between 50 and 400 nm.

Claim 50. (previously presented): The substrate of claim 49, wherein the film has a thickness of between 3 and 20 μm.

Claim 51. (previously presented): The substrate of claim 49, further defined as comprising an anti-abrasion coating.

Claim 52. (previously presented): The substrate of claim 49, further defined as comprising an anti-reflection coating.

Claim 53. (currently amended): The substrate of claim 49, further defined as comprising an anti-abrasion coating on the latex film and an anti-reflection coating on the [anti-reflection] anti-abrasion coating.

Claim 54. (previously presented): The substrate of claim 49, further defined as an ophthalmic lens.

Claim 55. (new): The method of claim 39, wherein the particles of the latex are further defined as having an average size of between 80 and 300 nm.

Claim 56. (new): The method of claim 55, wherein the particles are further defined as having an average size between 150 and 250 nm.

Claim 57. (new): The method of claim 24, wherein the organic photochromic compound is further defined as not containing an indoline ring.

Claim 58. (new): The method of claim 57, wherein the particles of polymer material have a biphasic structure, preferably of the core/skin type.

Claim 59. (new): The method of claim 58, wherein the organic photochromic compound is contained in the core of the particles.

Claim 60. (new): The method of claim 24, wherein the latex is further defined as a dry latex film.

Claim 61. (new): The method of claim 60, wherein the dry latex film has a thickness of between 3 and 20 μm.

Claim 62. (new): The method of claim 24, wherein a substrate comprises the latex.

Claim 63. (new): The method of claim 62, wherein the substrate further comprises an anti-abrasion coating.

Claim 64. (new): The method of claim 62, wherein the substrate further comprises an anti-reflection coating.

Claim 65. (new): The method of claim 62, wherein the substrate comprises an anti-abrasion coating on the latex film and an anti-reflection coating on the anti-abrasion coating.

Claim 66. (new): The method of claim 62, wherein the substrate is further defined as an ophthalmic lens.

RESPONSE TO THE OFFICE ACTION DATED APRIL 9, 2003

A. Status of the Claims

Claims 24-54 were pending at the time of the Action. Claims 24 and 53 were amended to correct minor errors of grammar. In view of the fact that this amendment relates only to remedying minor errors of grammar, it does not, in any way, affect the scope of the claims or range of equivalents to which the elements in the claims are entitled. Applicants have also added new claims 55-66. Support for these new claims can be found throughout the specification and the claims as originally filed. Claims 24-66, therefore, are currently pending.

B. The Anticipation Rejection is Improper

1. A Summary of the Rejection and the Standard for Establishing Anticipation

The Action rejects claims 24-30, 33-34, 36-37, and 40-41 under 35 U.S.C. § 102(b) as being anticipated by JP 10-25471. The Action contends that JP 10-25471 teaches "a photochromic latex which comprises naphthopyran compounds which is formed using an initiator, such as persulfate, and monomers such as methacrylates, and wherein a biphasic layer is formed." The Action, page 2. The Action also appears to suggest that the biphasic layer is used to form substrates, such as a lens. From this, the Action concludes that the present claims are anticipated.

Applicants respectfully traverse this rejection. The JP 10-25471 reference does not anticipate claims 24-30, 33-34, 36-37, and 40-41.

Anticipation requires that each and every element of the claimed invention be described, either expressly or inherently, in a single prior art reference. *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1327, 58 U.S.P.Q.2d 1545, 1552 (Fed. Cir. 2001); *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). It is well settled that the burden of establishing a *prima facie* case of anticipation resides with the

Examiner and only if that burden is met, does the burden of going forward shift to the applicant. *See In re Sun*, 31 U.S.P.Q.2d 1451 (Fed. Cir. 1993).

2. Applicants Claimed Invention

Applicants presently claim a "A method for preparing a latex with photochromic properties comprising: preparing an aqueous emulsion (I) of a composition A comprising: at least one organic monomer Z, ... and one or more organic photochromic compounds ... and polymerizing composition A in the presence of a water-soluble initiator to obtain particles of an at least partially polymerized latex with photochromic properties." Claim 24. Also claimed is a corresponding latex (claim 42) and a substrate comprising a dry latex film (claim 49) "with photochromic properties, further defined as comprising particles of a polymer material ... the particles of said polymer material having an average size of between 50 and 400 nm."

3. Claims 24-30, 33-34, 36-37 and 40-41 are Not Anticipated by JP 10-25471

In contrast to Applicants' claimed invention, the photochromic latex disclosed in the JP 10-25471 reference is produced by a different method. Specifically, JP 10-25471 teaches: first, dissolving a photochromic compound; second, adding a hydrophillic polymer to the dissolved photochromic compound; and third, adding a polymer latex to the mixture. *See* JP 10-25471, ¶¶ 0025, 0026, and 0028. The hydrophillic polymer and the polymer latex in JP 10-25471 are formed ***prior*** to being added to the photochromic solution. *Id.*

The JP 10-25471 reference does not appear to teach or suggest "[a] method for preparing a latex with photochromic properties comprising: preparing ... ***a composition A comprising: at least one organic monomer ... and one or more organic photochromic compounds*** ... ***and polymerizing composition A in the presence of a water-soluble initiator.***" Claim 24 (emphasis added). Applicants' claimed composition comprising a ***monomer*** and a photochromic compound is not disclosed in JP 10-25471. Also, the use of a water soluble initiator to

polymerize the claimed composition is not taught in the cited reference. In contrast, JP 10-25471 adds an ***already*** polymerized latex to the photochromic compound solution.

Because the JP 10-25471 reference does not teach or suggest every element of the presently claimed invention, the present anticipation rejection cannot be maintained. Accordingly, Applicants request that the rejection of claims 24-30, 33-34, 36-37 and 40-41 as being anticipated by JP 10-25471 be withdrawn.

C. The Obviousness Rejection is Improper

1. A Summary of the Rejection and the Standard for Establishing a *Prima Facie* Case of Obviousness

The Action also rejects claims 24, 31-32, 35, 37-39, and 42-54 under 35 U.S.C. § 103(a) as being obvious over JP 10-25471. In presenting this rejection, the Action admits that the JP 10-25471 reference does not teach every element of the presently claimed invention. Specifically, the Action states that this reference does not disclose "the progressive addition of components, the specific ratio of monomers, and the size of the latex particles... ." The Action, page 3. To supplement the deficient teachings of JP 10-25471, the Action reasons, without citing to any evidence, that "it would be obvious to one of ordinary skill in the art to vary the amount of monomer, and the size of the latex particles in order to optimize the photochromic properties of the latex." *Id.*

Applicants respectfully traverse this rejection. Claims 24, 31-32, 35, 37-39, and 42-54 are not obvious over the cited references.

It is well settled that "[t]he examiner bears the initial burden of factually supporting any *prima facie* case of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under ***no*** obligation to submit evidence of nonobviousness." *Manual of Patent Examining Procedure* (MPEP) § 2142 (8th Ed. Rev.) (emphasis added). To establish a *prima*

facie case of obviousness, the examiner must show: (1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) a reasonable expectation of success; and (3) the prior art reference teaches or suggests all of the claim limitations. *Manual of Patent Examining Procedure* § 2142; *see also In re Vaeck*, 947 F.2d 488, (Fed Cir. 1991). If any one of the three elements is missing, a *prima facie* case of obviousness cannot be maintained.

2. Claims 24, 31-32, 35 and 37-39 are Not Rendered Obvious Over JP 10-25471

i. The JP 10-25471 reference does not teach or suggest every element of the claimed invention

As discussed above, JP 10-25471 does not teach or suggest every limitation of Applicants' claimed invention. Specifically, it does not teach or suggest polymerizing "a composition A comprising: at least one organic monomer ... and one or more organic photochromic compounds ... and polymerizing composition A in the presence of a water-soluble initiator... ." Claim 24. In contrast and as noted above, this reference is directed towards adding an ***already polymerized*** latex to a photochromic solution. *See* JP 10-25471, ¶¶ 0025, 0026 and 0028.

Also, it must be noted that JP 10-25471 teaches that both water soluble and water insoluble initiators can be used to prepare the latex polymer. *See id.*, ¶ 0034. In contrast, the use of a non-water soluble initiator cannot be used with Applicants claimed method. The non-water soluble initiator would degrade the photochromic compound when polymerizing the monomer/photochromic compound composition. This is further evidence that Applicants' claimed invention, which only employs the use of a water soluble initiator, is a different and non-obvious invention than the methods disclosed in the cited references.

Moreover, the Action's citation to *In re Hampel*, 74 U.S.P.Q. 171 (C.C.P.A. 1947) to support the present obviousness rejection is wrong. For example, the holding in *In re Hampel* is limited to its facts. *Id.* (noting that "premixing the lime and water before adding it to the batch does not constitute an inventive act."). Also, Applicants' present invention is ***not*** analogous to the facts in *In re Hampel*. Applicants' invention is directed towards polymerizing a composition comprising a polymerizable monomer and a photochromic compound. This composition is ***not*** taught or suggested by the JP 10-25471 reference.

Because JP 10-25471 does not teach or suggest every element of the presently claimed invention, it fails an essential element of establishing a *prima facie* case of obviousness. As such, the present obviousness rejection cannot be maintained.

ii. There is no motivation to modify the teachings of the JP 10-25471 reference to teach Applicants' claimed invention

The Action fails to teach a second element necessary to establish a *prima facie* case of obviousness in this case. Specifically, there is no motivation to modify the teachings of JP 10-25471 to include the use of a composition comprising at least one organic monomer and one or more organic photochromic compounds. Also, there is no suggestion of polymerizing such a composition in the presence of a water-soluble initiator.

Applicants note that the burden rests on the Action to establish a motivation to modify this reference. *See* MPEP § 2142. This has not been done. In fact, the Action only cites to a non-analogous case from 1947 to support the present obviousness rejection of claims 24, 31, 35, and 37-39. There is no citation to any particular passage in the JP 10-25471 reference or any other extrinsic evidence that shows the existence of a motivation to modify the cited reference to use Applicants' claimed methods.

If anything, JP 10-25471 teaches away from Applicants' claimed methods. A reference is said to teach away when "a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *see also* MPEP § 2145 ("A prior art reference that 'teaches away' from the claimed invention is a significant factor to be considered in determining obviousness ... .").

A person of ordinary skill relying on the teachings of JP 10-25471 would be led in a path to add an ***already*** polymerized latex to a photochromic solution. *See* JP 10-25471, ¶ 0028. This is divergent and opposite from Applicants' claimed method of polymerizing a composition comprising a ***monomer*** and a photochromic compound in the present of a water soluble initiator. Because this is a divergent path, the JP 10-25471 reference teaches away from Applicants' claimed methods.

iii. There is no reasonable expectation of success that such a modification would work

Because there is no motivation to modify the cited reference, it follows that there is no reasonable expectation of success that such a modification would work. Similar to above, there is simply no evidence to support a finding of a reasonable expectation of success in this case. *See* MPEP § 2142 ("The examiner bears the initial burden of factually supporting any *prima facie* case of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under ***no*** obligation to submit evidence of nonobviousness."). This is especially true where the JP 10-25471 reference does not even teach polymerizing a composition comprising at least one organic monomer and one or more organic photochromic compounds in the presence of a water soluble initiator.

All three elements necessary to establish a *prima facie* case of obviousness have not been met. Again, JP 10-25471: (1) does not teach or suggest every element of the claimed invention; (2) fails to show a motivation to modify the reference to include the use of Applicants' claimed composition; (3) does not present any evidence of a reasonable expectation of success that such a modification would work; and (4) teaches away from the claimed invention. The present obviousness rejection, therefore, cannot be maintained.

Accordingly, Applicants request that the rejection of claims 24, 31, 32, 35, and 37-39 as being obvious over JP 10-25471 be withdrawn.

3. Claims 42-54 are Not Rendered Obvious Over JP 10-25471

i. The JP 10-25471 reference does not teach or suggest every element of the claimed invention

As noted above, claims 42-54 are directed towards a latex with photochromic properties (claim 42) or a substrate comprising a dry latex film with photochromic properties (claim 49) wherein "the particles of said polymer material having an average size of between 50 and 400 nm."

In contrast, the JP 10-25471 reference does not appear to teach, suggest, or even mention the size of the particles of the polymer material. *See* JP 10-25471. In fact, the Action admits this much by stating that "JP '471 differs from the present invention in that ... the size of the latex particles are not specifically disclosed." The Action, page 3.

To supplement the deficient teachings of this reference, the Action does not cite to ***any*** references, particular passages in JP 10-25471, or any other extrinsic evidence to support a *prima facie* case of obviousness. The Action simply makes a broad conclusory statement that "it would have been obvious to one of ordinary skill in the art to vary the amount of monomers, and the

size of the latex particles in order to optimize the photochromic properties of the latex (In re Aller, 103 USPQ 233, In re Rose, 103 USPQ 237)."[1]

Because of the lack of evidence supporting this rejection, it is apparent that the Action has not met its burden of establishing a *prima facie* case of obviousness. *See* MPEP § 2142. As such, the present obviousness rejection cannot be maintained.

ii. There is no motivation to modify JP 10-25471 to include the use particles having an average size of between 50 and 400 nm

As already admitted by the Action, the JP 10-25471 reference does not have any motivation to modify its teachings to use a photochromic latex comprising particles having an average size of between 80 and 400 nm. *See* the Action, page 3. Moreover, the Action does not cite to any evidence to support its assertion that it would have been obvious to a person of ordinary skill to use such particle sizes. *Id.* If the Action is relying on personal knowledge to support such an assertion, Applicants request that an affidavit be provided pursuant to 37 C.F.R. § 1.104(d)(2).

Because there is no evidence to support such a modification and because no motivation appears to exist, a second element necessary to maintain the present obviousness rejection is missing. As such, the present obviousness rejection cannot be maintained.

iii. There is no reasonable expectation of success that such a modification would work

Because there is no motivation to modify the cited reference to include the use of Applicants claimed particle size, it follows that there is no reasonable expectation of success that such a modification would work. Again, there is simply no evidence to support a finding of a

[1] Applicants note the citations to *In re Aller*, 103 USPQ 233 and *In re Rose*, 103 USPQ 237 are not correct. Specifically, these citations do not lead to either *In re Aller* or *In re Rose*. Applicants do not know what cases the Action intended to cite. As such, Applicants have no comments regarding these cases at this time.

reasonable expectation of success in this case. This is especially true where the JP 10-25471 reference does not even teach the use of Applicants' claimed particle sizes.

Neither of the three elements necessary to establish a *prima facie* case of obviousness exist in this case. Because of this, the present obviousness rejection should be withdrawn.

Accordingly, Applicants request that the rejection of claims 42-54 as being obvious over JP 10-25471 be withdrawn.

D. Double Patenting Rejection

The Action provisional rejections claims 24-27, 36, and 39 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of copending application No. 09/991,773. Applicants note that they will provide a Terminal Disclaimer upon the indication of allowable subject matter in this case.

E. Conclusion

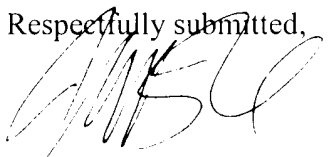
Applicants believe that the present document is a full and complete response to the Office Action dated April 9, 2003. In conclusion, Applicants submit that, in light of the foregoing remarks, the present case is in condition for allowance, and such favorable action is respectfully requested.

The Examiner is invited to contact the undersigned Attorney at (512) 536-3035 with any questions, comments or suggestions relating to the referenced patent application.

III. PETITION FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. § 1.136(a), Applicants petition for an extension of time of three month to and including October 9, 2003, in which to respond to the Office Action dated April 9, 2003. Pursuant to 37 C.F.R. § 1.17, a check in the amount of $930.00 is enclosed, which is the process fee for a three-month extension of time for a large entity status. If the check is inadvertently omitted, or should any additional fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to the enclosed materials, or should an overpayment be included herein, the Commissioner is authorized to deduct or credit said fees from or to Fulbright & Jaworski Deposit Account No. 50-1212/ESSR:052US.

Respectfully submitted,



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